The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A thrust vector control system for a plug nozzle rocket engine, comprising:

(a) a housing having a nozzle throat;

(b) a plug disposed relative to the housing and positioned within the nozzle throat to define a space between the plug and the nozzle throat; and

(c) a thrust diverter moveably disposed relative to the housing to provide an asymmetric surface pressure distribution along the plug for thrust-vectoring.

2. The thrust vector control system of Claim 1, wherein the thrust diverter is movably disposed relative to the nozzle throat.

3. The thrust vector control system of Claim 1, wherein the thrust diverter is slidably disposed relative to the nozzle throat.

4. The thrust vector control system of Claim 1, wherein the thrust diverter is normally biased to a non-thrust-vectoring position.

5. The thrust vector control system of Claim 1, wherein the thrust diverter is moveable in a plane substantially perpendicular to an axis extending longitudinally through the plug.

6. The thrust vector control system of Claim 5, wherein the thrust diverter includes a plate with an opening having a diameter.

7. The thrust vector control system of Claim 6, wherein the plate includes channels for receiving fasteners.

8. The thrust vector control system of Claim 6, wherein the diameter of the opening is substantially equal to a diameter of the nozzle throat.

9. The thrust vector control system of Claim 6, wherein the thrust diverter is self-centering to reposition the plate to a non-thrust-vectoring position.

10. The thrust vector control system of Claim 1, further comprising a first actuator coupled to the thrust diverter, the first actuator selectively moving the thrust diverter relative to the plug.

11. The thrust vector control system of Claim 10, further comprising a second actuator coupled to the thrust diverter, the first and second actuators selectively moving the thrust diverter relative to the plug.

12. The thrust vector control system of Claim 1, wherein the plug has a first end and a second end, the first end tapering inwardly toward the second end.

13. The thrust vector control system of Claim 12, wherein the second end of the plug terminates downstream from the thrust diverter.

14. The thrust vector control system of Claim 1, wherein the plug is moveable within the housing between an open position and a closed position relative to the nozzle throat.

15. A thrust vector control system for a plug nozzle rocket engine, comprising:

(a) a housing having a nozzle throat;

(b) a plug translationally mounted within the housing and positioned within the nozzle throat to define a space between the plug and the nozzle throat; and

(c) a thrust diverter moveably disposed relative to the housing to angularly deflect thrust relative to the plug for thrust-vectoring.

16. The thrust vector control system of Claim 15, wherein the thrust diverter is normally biased to a non-thrust-vectoring position.

17. The thrust vector control system of Claim 15, wherein the thrust diverter is moveable in a plane substantially perpendicular to an axis extending longitudinally through the plug.

18. The thrust vector control system of Claim 17, wherein the thrust diverter includes a plate with an opening having a diameter.

19. The thrust vector control system of Claim 18, wherein the diameter of the opening is substantially equal to a diameter of the nozzle throat.

20. The thrust vector control system of Claim 18, wherein the thrust diverter is self-centering to reposition the plate to a non-thrust-vectoring position.

21. The thrust vector control system of Claim 15, further comprising a first actuator coupled to the thrust diverter, the first actuator selectively moving the thrust diverter relative to the plug.

22. The thrust vector control system of Claim 21, further comprising a second actuator coupled to the thrust diverter, the first and second actuators selectively moving the thrust diverter relative to the plug.

23. The thrust vector control system of Claim 15, wherein the plug is moveable within the housing between an open position and a closed position relative to the nozzle throat.

24. A thrust vector control system for a plug nozzle rocket engine, comprising:

(a) means for generating thrust;

(b) means for controlling the thrust, the means for controlling the thrust being operative between full on and full off flow positions; and

(c) means for thrust-vectoring, the means for thrust-vectoring selectively producing an apparent angular thrust vector deflection by introducing surface pressure asymmetry along the length of the plug.

25. A thrust vector control system for a plug nozzle rocket engine, comprising:

(a) a housing having a nozzle throat;

(b) a plug disposed relative to the housing and positioned within the nozzle throat to define a space between the plug and the nozzle throat, wherein the plug is moveable within the housing between an open position and a closed position relative to the nozzle throat;

(c) a thrust diverter, including a plate having an opening with a diameter, a first actuator coupled to the plate, and a second actuator coupled to the plate;

(d) the plate being moveably disposed relative to the housing in a plane substantially perpendicular to an axis extending longitudinally through the plug;

(e) the plate being normally biased to a non-thrust-vectoring position;

(f) the first and second actuators selectively moving the plate relative to the housing; and

(g) the plate being moveable to a thrust-vectoring position, wherein when the plate is in a thrust-vectoring position, the plate defines an asymmetric surface pressure distribution along the plug.